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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/559,574	12/05/2005	Katsuyuki Imai	075170-0011	8894

20277 7590 07/26/2006

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EXAMINER

L.E. HOANGANH T

ART UNIT	PAPER NUMBER
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2821

DATE MAILED: 07/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/559,574

Applicant(s)

IMAI ET AL.

Examiner

HoangAnh T. Le

Art Unit

2821

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 December 2005.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-30 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 11-30 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 05 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.


HoangAnh T. Le
Primary Examiner

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/05/05.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.
2. The Preliminary Amendment filed on December 05, 2005 is acknowledged.

Drawings

3. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

5. Claims 12,16,18,20,22,24,26,28, and 30 are rejected under 35 U.S.C. 102(a) as being anticipated by Tsugawa (the JP 2004-304659, cited by Applicant)

Regarding claim 12, Tsugawa et al reference teaches in figures 1 and 3 a radio wave lens antenna comprising: a spherical radio wave lens 2 for focusing radio wave beams; and primary feeds 1 positioned at arbitrary radio wave focus points of the radio wave lens for transmitting or receiving the radio waves, wherein each primary feed 1 includes a dielectric-loaded waveguide antenna 4 where a dielectric body 4 is loaded at an end opening of a waveguide 3 and two of the primary feeds are installed closely and centers of the ends of the dielectric bodies of the two closely disposed primary feeds are disposed at off-centered positions in a direction that the centers are remotely spaced apart from each other to be located off the extension of each waveguide's center axis (figure 3).

Regarding claim 16, wherein the dielectric body of the dielectric-loaded waveguide antenna is protruded forward from the waveguide and a protruded portion of the dielectric body is of a taper shape having a thinned end (figures 5-9) .

Regarding claim 18, wherein the dielectric body is protruded forward from the waveguide and a part of an outer periphery of a protruded portion of the dielectric body is removed along a plane of a direction intersecting a cross section of the waveguide.

Regarding claims 20 and 22, wherein in a plane including a cross section of the protruded portion of the dielectric body protruded forward from the waveguide, a dimension of the protruded portion in a disposed direction of the primary feeds is smaller than that in a direction normal to the disposed direction of the primary feeds.

Regarding claims 24,26,28 and 30, wherein an end of the dielectric body

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protruded from the waveguide is cut out such that the end of the dielectric body is of flat or a round shape (figures 5-9) .

6. Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 11-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawabata et al (the JP 10-163730, cited by Applicant) in view of Fukuda et al (the JP 11-027037, cited by Applicant).

Regarding claims 11-12, and 15-30, the Kawabata et al reference teaches in figure 10 a radio wave lens antenna comprising: a hemispherical radio wave lens 31 for focusing radio wave beams; a reflective plate 33 attached to a half-cut surface of the sphere of the radio wave lens for reflecting radio waves incoming from the sky or radiated toward targets; and primary feeds 32 positioned at arbitrary radio wave focus points of the radio wave lens for transmitting or receiving the radio waves. Figure 8 shows a spherical radio wave lens for focusing radio wave beams. Kawabata et al does not teach each primary feed including a dielectric-loaded waveguide antenna.

The Fukuda reference teaches in figure 3 each primary feed 12,22 including a dielectric-loaded waveguide antenna in order to improve the radiated beams, where a dielectric body 10,20 is loaded at an end opening of a waveguide 11,21 and two of the primary feeds are installed closely and centers of the ends of the dielectric bodies of the two closely disposed primary feeds are disposed at off-centered positions in a direction that the centers are remotely spaced apart from each other to be located off the extension of each waveguide's center axis (figure 3). The dielectric body of the dielectric-loaded waveguide antenna is protruded forward from the waveguide and a protruded portion of the dielectric body is of a taper shape having a thinned end (figure 3). The dielectric body is protruded forward from the waveguide and a part of an outer periphery of a protruded portion of the dielectric body is removed along a plane of a direction intersecting a cross section of the waveguide (figure 3). In a plane including a cross section of the protruded portion of the dielectric body protruded forward from the waveguide, a dimension of the protruded portion in a disposed direction of the primary feeds is smaller than that in a direction normal to the disposed direction of the primary feeds (figure 3). Wherein an end of the dielectric body protruded from the waveguide is cut out such that the end of the dielectric body is of flat or a round shape (figures 3 and 6).

Since one of ordinary skill in the art would recognize the benefit of improving the radiation beam of the antenna, it would have been obvious to provide Kawabata et al with dielectric-loaded waveguide antenna as taught by Fukuda et al.

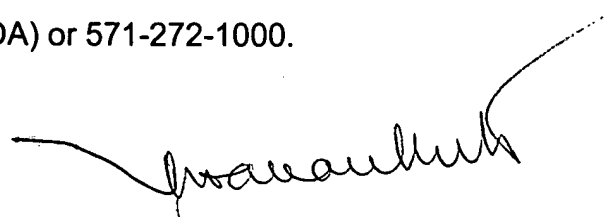
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Regarding claims 13-14, it would have been an obvious matter of design choice to have the dielectric loaded waveguide being a dielectric loaded rectangular waveguide, since such a modification would have involved a mere change in the shape of a component. A change in shape is generally recognized as being within the level of ordinary skill in the art.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HoangAnh T. Le whose telephone number is (571) 272-1823. The examiner can normally be reached on 8:00am-4:30pm.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

10. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



HoangAnh Le
Primary Examiner